

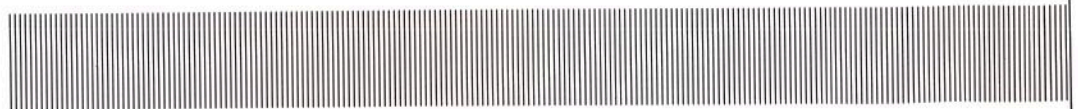
The Development Authority of the Borough of Taylor
Taylor, Pennsylvania

DRAFT
Phase II Investigation

Taylor Colliery

Taylor, Pennsylvania

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Report Prepared By:

Malcolm Pirnie, Inc.

640 Freedom Business Center, Suite 310
King of Prussia, Pennsylvania 19406

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1. Introduction

On behalf of the Development Authority of the Borough of Taylor, Malcolm Pirnie Inc. performed an investigation to evaluate certain conditions at the property identified as the Taylor Colliery (Site) in response to the observations described in a Phase I Environmental Assessment (Malcolm Pirnie, 2007).

1.1. Site Description

The Site is centrally located at 300 North Main Avenue in Taylor Pennsylvania as depicted on **Figure 1-1**. The Site consists of two parcels of property, totaling approximately 150 acres, located within a historically industrial area. The Site was determined to be appropriate for designation as a “brownfield” under a grant program administered by the United States Environmental Protection Agency (USEPA). The parcels of land are owned by the Development Authority of the Borough of Taylor and are collectively referred to as the Taylor Colliery. The Site is currently zoned for light industrial. The Site consists of a closed surface (strip), and a traditional (underground) coal mine and breaker. Both mining operations have ceased production. The Site is composed of two parcels as described below and as shown on **Figure 1-1**.

1.1.1. Canoe Parcel

The “canoe parcel,” as the name implies, is shaped like a canoe and covers an area approximately 3,900 feet long and 700 feet wide. The canoe parcel juts out from the western side of the main parcel and is a designated mine-land area. There are no structures or major site features located on the canoe parcel.

1.1.2. Main Parcel

The main parcel consists of a meadow area in the far northeast corner and area in front of the beginning of the canoe parcel; woods are located in the northern-most area along 3rd Avenue and Pines Street, and along the southern half of the Main Street border. Mine-

lands are located within the middle interior of the main parcel and several abandoned and capped shafts and boreholes that were used during mining operations are located within the main parcel near the entrance to the canoe parcel. A detailed view of the main parcel is shown on **Figure 1-2**.

1.1.3. Site Structures and Major Features

The 150 acre site is mostly open space vegetated by deciduous and evergreen trees that reestablished after approximately 40 years of cessation of mining. Improvements of note currently present on Site include an access road consisting of laid stone and one existing building known as the “boiler building,” located on the main parcel. It is noted that some dumping of debris has taken place on Site and it appears that the Site generally has not historically been maintained or secured. The dumping appears to consist of municipal waste, including durable goods (i.e. washers, dryers, sinks) and used passenger vehicle tires. A large open area that was apparently used for coal storage at one time is currently unvegetated. The area in the vicinity of the former breaker building has construction and demolition (C&D) debris present. A site walk concluded that the area was also used by ATV motorists. The property contains closed, backfilled, or otherwise capped mine and air shafts, and boreholes. Some areas where mining had taken place have been backfilled with refuse ash and local fill.

1.2. Phase I Environmental Site Assessment

A Phase I Environmental Site Assessment (Phase I) of the Site was completed by Malcolm Pirnie and submitted to USEPA Region III in December 2007. The Phase I identified the following Recognized Environmental Conditions (RECs):

- REC 1 – Potential unregistered underground storage tank (UST) of unknown size
- REC 2 – Petroleum staining within the boiler building
- REC 3 – Various empty containers drums
- REC 4 – Three (3) electrical transformers
- REC 5 – Coal storage areas

The RECs are all located on the main parcel.

2. Phase II Investigation

In July 2008, Malcolm Pirnie performed a soil investigation to investigate the following RECs identified in the Phase I:

- REC 1 – Potential unregistered UST of unknown size
- REC 2 – Petroleum staining within the boiler building
- REC 3 – Various empty containers drums
- REC 4 – Three (3) electrical transformers
- REC 5 – Coal storage areas

Sampling was conducted in accordance with the Site-Specific Sampling and Analysis Plan submitted to the USEPA in June 2008 (Malcolm Pirnie, 2008). Drilling was performed by Hill Environmental Remediation Services. Analytical Services were provided by Chemtech Laboratories of Mountainside, New Jersey.

2.1. REC 1 – Potential Underground Storage Tank (UST)

During the site reconnaissance conducted for the Phase I, a possible man-way to an underground storage tank was observed in the main parcel. In July 2008, a backhoe was used to excavate test pits adjacent to the structure to determine whether a UST was present. The structure turned out to be an airshaft or flush-well; therefore, no samples were collected.

2.2. REC 2 – Petroleum Staining

During the site reconnaissance conducted for the Phase I, apparent petroleum staining was observed within the interior of the boiler building. Three trench-like floor drains, two culverts, and a boiler were observed in the boiler building. The floor drains appeared to drain to the basement of the building. In July 2008, six soil borings were advanced through the floor of the boiler building basement and one sample was collected from each boring (REC2-BASE1 through REC2-BASE6). Sampling locations were biased toward

the floor drains, culverts and the boiler. Access for soil sampling beneath the basement floor was accomplished via concrete coring of the floor and samples were collected using a direct push sampler. Two borings (REC2-TRENCH1 and REC2-TRENCH2) were also advanced in two of the floor drains and one sample was collected from each boring. The floor drain borings were advanced to approximately three to four feet bgs using a hand auger. Samples were collected from the interval which indicated the highest potential for impacts based on field observations. These samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), Resource Conservation and Recovery Act (RCRA) metals, and polychlorinated biphenyls (PCBs) using USEPA Methods 8260B, 8270C, 6010 and 8082, respectively. Sample locations are depicted on **Figure 2-1**.

2.3. REC 3 – Empty Drums / Containers

In several locations within the main parcel, empty and rusted 55-gallon metal storage drums were observed during the Phase I. There was no evidence of identification labels on the drums. The majority of these drums were located at the periphery of the boiler building. In July 2008, five borings were advanced to approximately eight feet bgs in the areas of the drums using a direct push sampler. Based proximity of these borings to the boiler building, they were identified as REC2-SB-1 through REC2-SB-5. One sample was collected from each boring and analyzed for VOCs, SVOCs, RCRA metals, and PCBs. Samples were collected from the interval which indicated the highest potential for impacts based on field screening with a PID. Sample locations are depicted on **Figure 2-1**.

2.4. REC 4 – Electrical Transformers

Three transformer housings were identified in the main parcel of the Site during the Phase I. The transformers appeared to be empty; therefore, the soil surrounding the transformers was sampled for the presence of PCBs. In July 2008, three surface soil samples (REC4-S1 through REC4-S3) were collected (one from the base of each transformer) and analyzed for PCBs. Samples were collected from approximately six inches bgs using a hand auger. Sample locations are depicted on **Figure 2-1**.

2.5. REC 5 – Coal Storage Areas

In July 2008, two borings were advanced throughout the main parcel in the former coal storage areas. The borings were advanced to approximately eight feet bgs and one sample was collected from each boring using a direct push sampler. Samples were collected from the interval which indicated the highest potential for impacts based on field screening with a PID. The samples were analyzed for VOCs, SVOCs, RCRA metals, and PCBs. Two soil boring were also advanced in the area of the old breaker building, one was advanced to eight feet bgs and one was advanced two feet bgs. The shallow sample was based on direction from Taylor Borough personnel based on a historical photograph which displayed an electrical transformer pad and sampled for PCBs. The other boring was advanced to approximately eight feet bgs and one sample was collected from the boring using a direct push sampler. Samples were collected from the interval which indicated the highest potential for impacts based on field screening with a PID. The samples were analyzed for VOCs, SVOCs, RCRA metals, and PCBs.. Sample locations are depicted on **Figure 1-1**.

3. Results and Discussion

A total of 20 soil samples were collected at the Site as part of the Phase II investigation. No samples were collected from REC-1 because no UST was identified. Therefore, REC-1 is not included in the discussion below. All samples were analyzed for VOCs, SVOCs, RCRA metals, and PCBs with the exception of the REC-4 samples which were analyzed for PCBs only. All sampling results were compared to the Pennsylvania Department of Environmental Protection's (PADEP's) Statewide Health Standards (SHS). Tables 1 through 4 summarize the analytical results for VOCs, SVOCs, Metals, and PCBs in soil, respectively. Appendix A presents the analytical laboratory reports for the samples collected during this investigation.

3.1. REC-2 Petroleum Staining

3.1.1. Field Observations

As described in the borings logs in Appendix B, soils in this area generally consist of fill material composed of sand and gravel sized pieces of rock, wood, glass, and ash. No elevated PID readings were detected.

3.1.2. Analytical Results

3.1.2.1. VOCs

All laboratory analytical results for the samples collected from the boiler building basement and floor drains were less than residential and non-residential SHS for VOCs.

3.1.2.2. SVOCs

Several polycyclic aromatic hydrocarbons (PAHs) were detected above the residential and non-residential SHS in the samples collected from the boiler building floor drains (REC2-TRENCH1 and REC2-TRENCH2). No SVOCs were detected above residential or non-residential SHS in the samples collected from the boiler building basement.

3.1.2.3. RCRA Metals

Arsenic was detected above the residential and/or non-residential direct contact SHS in five of the six samples collected from the boiler building basement (REC2-BASE1 through REC2-BASE5). Selenium was also detected above the non-residential soil-to-groundwater SHS in REC2-BASE2. Arsenic was detected above the residential direct contact SHS in both of the samples collected from the boiler building floor drains (REC2-TRENCH1 and REC2-TRENCH2). Lead was detected above the residential and non-residential soil-to-groundwater SHS in both of these samples. Cadmium was also detected above the residential and non-residential soil-to-groundwater SHS in REC2-TRENCH1.

3.1.2.4. PCBs

No PCBs were detected in the samples collected from the boiler building basement and floor drains.

3.2. REC-3 Empty Drums / Containers

3.2.1. Field Observations

As described in the borings logs in Appendix B, soils in this area generally consist of fill material composed of sand and gravel sized pieces of rock, wood, glass, and ash. No elevated PID readings were detected.

3.2.2. Analytical Results

3.2.2.1. VOCs

All laboratory analytical results for the samples collected at the periphery of the boiler building were less than residential and non-residential SHS for VOCs.

3.2.2.2. SVOCs

All laboratory analytical results for the samples collected at the periphery of the boiler building were less than residential and non-residential SHS for SVOCs.

3.2.2.3. RCRA Metals

All laboratory analytical results for the samples collected at the periphery of the boiler building were less than residential and non-residential SHS for RCRA metals.

3.2.2.4. PCBs

No PCBs were detected in the samples collected at the periphery of the boiler building.

3.3. REC-4 Transformers

3.3.1. Field Observations

Soils in the vicinity of the transformers consisted of silty sand with various types of fill (ash, concrete fragments, and gravel) and coal fragments. PID readings ranged from 0.0 to 22.9 ppm.

3.3.2. Analytical Results

3.3.2.1. PCBs

No PCBs were detected in the samples collected from the soil surrounding the transformers.

3.4. REC-5 Coal Storage Areas

3.4.1. Field Observations

The soil boring for REC – 5 were taken from two distinct areas. SB-1 and SB-2 were taken from coal storage areas and the soils were identified as a layer of pulverized coal above fill, ash, and concrete gravel. SB-3 and SB-4 were taken in the vicinity of the old breaker. The soils in this area were identified as fill, ash, and concrete gravel. No elevated PID readings were detected at these location.

3.4.2. Analytical Results

3.4.2.1. VOCs

All laboratory analytical results for the samples collected from the coal storage areas were less than residential and non-residential SHS for VOCs.

3.4.2.2. SVOCs

All laboratory analytical results for the samples collected from the coal storage areas were less than residential and non-residential SHS for SVOCs.

3.4.2.3. RCRA Metals

Arsenic was detected above the residential direct contact SHS in two samples collected from the coal storage areas (REC5-SB1 and REC5-SB2). Laboratory analytical results for all of the remaining RCRA metals were less than residential and non-residential SHS.

3.4.2.4. PCBs

No PCBs were detected in the samples collected from the coal storage areas.

4. Conclusions and Recommendations

Based on the analytical results, the following RECs identified during the Phase I require no further action:

- REC 1 – Potential unregistered UST of unknown size
 - No UST was identified.
- REC 3 – Various empty containers drums
 - All laboratory analytical results for VOCs, SVOCs, RCRA metals, and PCBs were below residential and non-residential SHS for samples collected in this area.
- REC 4 – Three (3) electrical transformers
 - No PCBs were detected for samples collected in this area.

In addition, all laboratory analytical results for VOCs and PCBs were below residential and non-residential SHS throughout the Site. Therefore no further action is recommended regarding VOCs and PCBs in soil.

REC-2

Some level of effort would be required under an Act 2 closure scenario to address PAH and metals concentrations in soil on-Site. Several PAHs were detected above residential and non-residential SHS in the samples collected from the boiler building floor drains. Analytical results for the sample REC2-TRENCH1 exceeded non-residential SHS for both the direct contact and soil-to-groundwater pathway. Based on the isolated nature of these exceedances, the most effective way to obtain an Act 2 closure with regard to PAHs in soil may be to excavate and dispose of the soils in and around the floor drains.

Based on the non-residential use of the Site, the only metals concentrations that would likely need to be addressed to obtain an Act 2 closure are the arsenic and selenium concentrations in the samples collected from the boiler building basement. Arsenic was

detected in four of the six samples at concentrations exceeding the SHS for the direct contact pathway. One of these samples also exceeded the non-residential SHS for the soil-to-groundwater pathway for arsenic and selenium. Recent promulgation of the Pennsylvania Uniform Environmental Covenants Act (UECA) closure under the non-residential MSCs would likely result in PADEP requiring deed restriction and possibly maintenance of engineering controls to eliminate potential exposure pathways for arsenic and selenium in soil on-Site.

In addition, if the current use scenario changes (i.e. from non-residential to residential) a deed restriction may be necessary to eliminate potential exposure pathways for lead and cadmium.

REC-5

Two of soil boring for REC-5 were taken in the area known as “coal storage” and were found to exceed the residential and non-residential direct contact SHS for arsenic. The samples were taken in what was identified during the site visit as within the coal storage areas, as representative samples. Due the size of these areas, approximate 45 acres, we recommend further sampling to identify the extent of the area of elevated arsenic levels.

5. References

Malcolm Pirnie. December 2007. *Phase I Environmental Site Assessment Report, 300 North Main Street, Taylor, PA 18517.*

Malcolm Pirnie. June 2008. *U.S. EPA Region III Brownfields, Site-Specific Sampling and Analysis Plan, BF-97344101 Taylor Borough Brownfield Assessment Grant.*